

- CHAUDHRI, M. N., I. H. VEGTER, and C. DEL WAL. 1972. Index Herbariorum. Part II(3), Collectors I-L. Regnum Veg. 86. The International Bureau for Plant Taxonomy and Nomenclature, Utrecht. 174 pp.
- CLEWELL, A. E. 1985. Guide to the vascular plants of the Florida Panhandle. University Presses of Florida, Tallahassee. 605 pp.
- COILE, N. C. and S. B. JONES, JR. 1985. The Georgia plant list. Dept. of Botany, Univ. of Georgia, Athens. 69 pp.
- DUNCAN, W. H. and J. T. KARTESZ. 1981. Vascular flora of Georgia, an annotated checklist. Univ. of Georgia Press, Athens. 146 pp.
- HARPER, R. M. 1905. Phytogeographical explorations in the coastal plain of Georgia in 1903. Bull. Torrey Bot. Club 32:141–171.
- HARPER, R. M. 1906a. A phytogeographical sketch of the Altamaha Grit region of the coastal plain of Georgia. Ann. New York Acad. Sci. 17:1–415.
- HARPER, R. M. 1906b. Some hitherto undescribed outcrops of Altamaha Grit and their vegetation. Torreya 6:241–246.
- HOLIFIELD, V. L. and M. E. B. CARTER. 1989. Flora of the sandstone outcrops of the Altamaha Grit and a comparison to granitic outcrops of the Georgia Piedmont. ASB Bull. 36:100 (abstract).
- JONES, S. B., JR. and N. C. COILE. 1988. The distribution of the vascular flora of Georgia. Dept. of Botany, Univ. of Georgia. 230 pp.
- MELLINGER, M. B. 1984. Atlas of the vascular flora of Georgia. Georgia Botanical Society, Milledgeville.
- RIGDON, T. A. 1988. Soil survey of Atkinson, Bacon, and Coffee counties, Georgia. USDA Soil Conservation Service. 138 pp. + maps.
- SMALL, J. K. 1933. Manual of the Southeastern Flora. Published by the author, New York. 1554 pp.
- VAN OOSTSTROOM, S. J. 1934. A monograph of the genus *Evolvulus*. Meded. Bot. Mus. Herb. Rijks Univ. Utrecht 14:1–267.
- WARD, D. B. 1968. Contributions to the flora of Florida - 3, *Evolvulus* (Convolvulaceae). Castanea 33:76–79.
- WHARTON, C. H. 1978. The natural environments of Georgia. Georgia Dept. of Natural Resources, Atlanta. 227 pp.

SYNGONANTHUS FLAVIDULUS (ERIOCAULACEAE) NEW TO MISSISSIPPI—We observed *Syngonanthus flavidulus* (Michx.) Ruhl. in Mississippi in 1985, and collected specimens in May of 1987. Since *S. flavidulus* commonly occurs in similar habitats in the Florida panhandle, we did not consider its presence in Mississippi as unusual. Only after discussing the Mississippi occurrences with Will McDearman of the Mississippi Museum of Natural Science and Cary Norquist of the U. S. Fish and Wildlife Service in the summer of 1988, and reviewing the literature, did we realize that *Syngonanthus flavidulus* may not have been previously collected or definitively reported for Mississippi. In surveying the flora of fifteen bogs in five southern Mississippi counties, we located this species at

six sites in three counties. Data on the Hancock County site was provided by Cary Norquist. The collection data are as follows:

MISSISSIPPI: **George Co.:** high hillside seepage bog on 20% slope to SW of US 98, from 0.8 – 1.1 mi NW of Escatawpa River and Alabama state line, ca. 11 mi SE of Lucedale; EH, SEQ, Sec. 13, T2S, R5W; Howell 7.5' Quad., 30° 52' 13" N, 88° 25' 51" W, Elev. 90 – 120 ft, 1 Aug 1988, *Orzell & Bridges* 7724 (NCU, TEX). **Hancock Co.:** W side of Hwy 603, ca. 3.5 mi NW of Kiln, bog near transmission line, 16 Apr 1988, *Norquist, L. Smith, & N. Gilmore* 2411 (MMNS). **Harrison Co.:** quaking deep muck hillside bog on lower slope above Bayou Bernard, on W side of county rd, 0.3 mi N of New Hope, 1.3 mi N of int. I-10 at a point 2.3 mi W of US 49 N of Gulfport; N edge, NEQ, Sec. 13 & S edge, SEQ, Sec. 12, T7S, R12W; Gulfport NW 7.5' Quad., 30° 26' 30" N, 89° 08' 25" W, Elev. 45 – 50 ft, 26 May 1987, *Orzell & Bridges* 5299 (SMU, TEX), 5 Aug 1988, *Orzell & Bridges* 7925 (MO, TEX); disturbed low hillside seepage bog on N side of Sixteen Section Rd, 0.9 mi E of Edwin Ladner Rd and 1.4 mi W of paved rd to St. Anne Church, ca. 6 mi NW of DeLisle; SEQ, NWQ, Sec. 17, T7S, R13W; Vidalia 7.5' Quad., 30° 26' 12" N, 89° 19' 03" W, Elev. 40 – 60 ft, 7 Aug 1988, *Orzell & Bridges* 7949 (FSU, GA, IBE, NCU, SMU, TEX); frequently burned quaking sapric peat streamhead bog on S side of MS 53, 6.1 mi NW of US 49 at Lyman, just W of CC Camp Rd.; NWQ, SWQ, Sec. 16, T6S, R12W; Wortham 7.5' Quad., 30° 31' 17" N, 89° 12' 08" W, Elev. 90 – 110 ft, 4 Aug 1988, *Orzell & Bridges* 7864 (NCU, NY, SMU, TEX); sapric deep muck bog on W side of paved rd, 0.7 mi S of Stone Co. line, ca. 1.5 mi N of Riceville and 10 air miles W of Saucier; center of SWQ, Sec. 4, T5S, R13W; Silver Run 7.5' Quad., 30° 38' 13" N, 89° 18' 14" W, Elev. 180 – 210 ft, 4 Aug 1988, *Orzell & Bridges* 7879 (MO, SMU, TEX). **Jackson Co.:** sapric deep muck streamhead bog in ravine to E of Daisy-Vestry Rd, ca. 0.8 mi S of Indian Fork Rd., ca. 4 mi N of Latimer, in DeSoto National Forest; SH, SWQ, SWQ, Sec. 23, T5S, R9W; Latimer 7.5' Quad., 30° 35' 24" N, 88° 51' 54" W, Elev. 70 – 80 ft, 2 Aug 1988, *Orzell & Bridges* 7755 (IBE, NCU, TEX).

Syngonanthus flavidulus is a characteristic, overall infrequent but locally abundant, indicator of the deep muck seepage bogs which are fairly common in the six southernmost counties of Mississippi. The sapric soils of these bogs consist of highly decomposed organic material with little fiber content. At most sites, *S. flavidulus* occurs in areas of copious groundwater seepage but little permanent standing water, near the upslope edge of streamhead bogs or scattered within hillside bogs. The most frequently associated species (growing intermixed with *S. flavidulus* at three or more sites) are *Lachnocaulon digynum* Koern., *Sarracenia psitticina* Michx., and *Xyris drummondii* Malme. Other closely associated species include *Bigelowia nudata* (Michx.) DC., *Burmannia capitata* (Walt.) Mart., *Drosera capillaris* Poir., *D. tracyi* Macfarlane, *Eriocaulon decangulare* L., *E. texense* Koern., *Eryngium integrifolium* Walt., *Lophiola aurea* Ker-Gawl., *Oxypolis filiformis* (Walt.) Britt., *Pinguicula planifolia* Chapm., *Polygala cruciata* L., *P. hookeri* Torr. & Gray, *Rhynchospora macra* (C. B. Clarke) Small, *R. oligantha* Gray, *R. stenophylla* Chapm. ex M. A. Curtis, *Sabatia macrophylla*

Hook., *Sarracenia alata* Wood, *Tofieldia racemosa* (Walt.) B.S.P., *Xyris ambigua* Beyr. ex Kunth, *X. baldwiniana* Schultes, *X. difformis* Chapm. var. *curtissii* (Malme) Kral, *X. fimbriata* Ell., and *X. scabrifolia* Harper. Of these species, several are listed as rare in Mississippi (Mississippi Natural Heritage Program 1986), including *Eriocaulon texense*, *Lachnocaulon digynum*, *Pinguicula planifolia*, *Polygala hookeri*, *Rhynchospora macra*, *Xyris drummondii*, and *X. scabrifolia*. Another noteworthy associate is *Rhynchospora stenophylla*, which we found to be a characteristic species of these deep muck bogs and perhaps more frequent in Mississippi than elsewhere in its limited range. Southern disjunct populations of *Carex exilis* Dewey occur at several of these bog sites (Bryson et al. 1988), but in a distinctly wetter, lower, and less sloping microhabitat with deeper organic soils, and not closely associated with *Syngonanthus flavidulus*.

According to Kral (1966) *S. flavidulus* ranges from Florida north to southeastern Virginia (?) and west to southern Alabama. Kral (1966), Harvill et al. (1981), and Moldenke (1977, 1980) map or list no Virginia records for this species. The westernmost localities mapped in Kral (1966) are in Baldwin County, Alabama and Okaloosa County, Florida. Moldenke (1977) adds Santa Rosa County, Florida and Mobile County, Alabama to these westernmost reports. Wilhelm (1984) adds Escambia County, Florida, where we have found this species in pannes (interdunal wetlands) on Santa Rosa Island (Orzell & Bridges 7651 - GA, MO, NCU, NY, SMU, TEX). Moldenke (1984) adds Washington County in southern Alabama based on a collection by Kral. Kral (1989) reports *Syngonanthus flavidulus* as occurring from North Carolina south to Florida and west to Alabama. Moldenke (1977, 1980) also lists *S. flavidulus* from Holmes County (Ebenezer), Mississippi, on the basis of *Cabanis s.n.* (B). We questioned the validity of the locality of this collection, since suitable habitats for this species apparently do not occur in Holmes or adjacent counties. J. L. Cabanis is known to have collected in South Carolina, Florida, and Kentucky in the period 1839–41 and to have distributed plants collected in Florida by E. E. Leitner before 1838 under his own name (Lanjouw & Stafleu 1954). Koernicke (1856) cites a collection of *Eriocaulon flavidulum* Michx. as "Prope Charlestown attul. Cabanis (Hb. Berol.)," therefore Cabanis probably collected *S. flavidulus* in South Carolina. Perhaps the reference to "Mississippi" could be a mixup in labeling of this or another Cabanis collection.

Other Mississippi collections of *Syngonanthus flavidulus* may exist, perhaps misidentified as other species of Eriocaulaceae. Moldenke (1977,

1984) noted that *S. flavidulus* has often been misidentified as *Eriocaulon lineare* Small. *Eriocaulon lineare* was reported from a bog which may be identical with one of our Harrison County, Mississippi *S. flavidulus* sites (Eleuterius & Jones 1969). Our records represent a slight westward extension of from 10 to 90 km from the nearest previously reported localities for *Syngonanthus flavidulus* in southern Alabama.

We wish to acknowledge Will McDearman of the Mississippi Museum of Natural Science for supplying the localities of three of these bogs, and Cary Norquist of the U. S. Fish and Wildlife Service for providing her collection data.—*Edwin L. Bridges and Steve L. Orzell, The University of Texas Herbarium, Austin, TX 78713, U.S.A.*

REFERENCES

- BRYSON, C. T., W. MCDEARMAN, and K. L. GORDON. 1988. *Carex exilis* Dewey (Cyperaceae) in Mississippi bogs. *Sida* 13:171–175.
- ELEUTERIUS, L. N. and S. B. JONES, JR. 1969. A floristic and ecological study of pitcher plant bogs in south Mississippi. *Rhodora* 71:29–34.
- HARVILL, A. M., JR., C. E. STEVENS, and D. M. E. WARE. 1981. Atlas of the Virginia Flora, part 1, Monocotyledons. Virginia Botanical Associates, Farmville. 148 pp.
- KOERNICKE, E. 1856. Monographia scripta de Eriocaulaceis. Dissertatio Inauguralis. Berlin.
- KRAL, R. 1966. Eriocaulaceae of continental North America north of Mexico. *Sida* 2:285–332.
- . 1989. The genera of Eriocaulaceae in the southeastern United States. *J. Arnold Arbor.* 70:131–142.
- LANJOUW, J. and F. A. STAFLEU. 1954. Index Herbariorum, Part II - Collectors. First Installment A-D. *Regnum Veg.* Vol. 2. The International Bureau for Plant Taxonomy and Nomenclature, Utrecht. 174 pp.
- MISSISSIPPI NATURAL HERITAGE PROGRAM. 1986. Special plant list. Unpublished. 9 pp.
- MOLDENKE, H. N. 1977. Additional notes on the Eriocaulaceae. LXXI. *Phytologia* 36:54–85.
- . 1980. A sixth summary of the Verbenaceae, Avicenniaceae, Stilbaceae, Chloanthaceae, Symphoremaceae, Nyctanthaceae, and Eriocaulaceae of the World as to valid taxa, geographic distribution, and synonymy. *Phytologia Memoirs* II. 629 pp.
- . 1984. Additional notes on the Eriocaulaceae. XCVI. *Phytologia* 55:57–108.
- WILHELM, G. S. 1984. Vascular flora of the Pensacola Region. Ph.D. dissertation, Southern Illinois University. 213 pp. + bibliography.